1076-59 Comparison of Monotherapy for Reduction of Left Atrial Size In Mild-to-Moderate Hypertension: Results of a Multicenter Trial

J.S. Gottdiener, D. Williams, D. Reda, B. Materson for the VA Cooperative Study Group on Anti-Hypertensive Agents. *Georgetown University Hospital, Washington DC, USA*

While LV mass and left atrial (LA) size are both increased in hypertension (HTN) and are both predictors of clinical outcome, few data are available on the effects of treatment on LA size. We report results of a 15 center randomized double-blind dose-titration trial of six active drugs on LA size. In 587 men (av BP 152 ± 14/99 ± 3 mmHg, av age 58 ± 10 yrs, av LA size 41 ± 6 mm, range 20–63 mm) centrally read echos were compared between atenolol (ATEN), captopril (CAPT), clonidine (CLON), diltiazem (DILT), hydrochlorothiazide (HCTZ) and prazosin (PRAZ). With HCTZ change in LA size from baseline was −1.3 ± 5.4 mm at 8 wks ($p = 0.053$), −2.7 ± 4.8 mm at one yr ($p = 0.002$), and −5.7 ± 7.3 at two yrs ($p = 0.001$). Decrease in LA size with HCTZ differed at one yr from all other drugs ($p = 0.004$ ANOVA) although reductions ($p < 0.05$) of LV mass occurred with HCTZ, ATEN and CAPT in the highest tersile. Predictors of change in LA size on mixed model multivariate analysis were drug ($p < 0.0001$), treatment duration ($p < 0.0001$), baseline LA size ($p < 0.0001$), age ($p = 0.018$), body weight ($p < 0.0001$) and LV cavity size ($p = 0.011$), but not systolic BP, race, sodium excretion, or physical activity.

Conclusion: Despite equivalent reduction of diastolic BP with 6 active drugs, only HCTZ was associated with early and sustained reduction of LA size.

1076-60 Effect of Antihypertensive Therapy on Non Hypertrophic Heart

Franco Sau, Crisotemide Seguro, Raffaele Congiu, Benedetta Guaita, Angelo Cherchi. *Institute of Cardiology, University of Cagliari, Italy*

The aim of our study was to evaluate the effect of long-term antihypertensive therapy (HT) on structure of non hypertrophic left ventricle. Thirty-seven hypertensive pts (mean age 43 years), without LV hypertrophy at echocardiography (LV mass <140 g/m^2 in men and g/m^2 in women), were studied by serial clinical echocardiographic exams during 12 months of HT. The were divided in two subgroups on the base of LV geometry: 23 pts had normal LV geometry, that is a normal ratio between wall thickness and ventricular cavity ($h/R \leq 0.43$) and 14 pts had LV concentric remodeling that is an increased relative wall thickness ($h/R \geq 0.43$). Blood pressure decreased significantly after 1 month and showed a progressive decrease until the end of the study in both subgroups. LV end-diastolic dimension (EDD), septal (ST) and posterior wall thickness (PWT), LV mass and h/R ratio did not significantly change in pts with normal LV geometry throughout the study. In pts with LV concentric remodeling LV increased significantly after 3 months, ST decreased after 3 months (baseline: 12.3 ± 1.6 mm; after 12 months 11.1 ± 1.8 mm, $p \leq 0.001$); LV PWT decreased after 6 months (baseline: 10.0 ± 1.0 mm; after 12 months: 9.2 ± 1.4 $p \leq 0.01$); LV mass decreased after 9 months (baseline: 122 ± 16 g/m^2; after 12 months: 112 ± 14 g/m^2 $p \leq 0.001$); h/R ratio decreased after 1 month (baseline: 0.50 ± 0.05; after 12 months: 0.44 ± 0.07, $p \leq 0.001$). LV geometry normalized in 7 of these pts (50%) at the end of anti-HT.

In conclusion, anti-HT does not seem to be able to decrease LV mass in hypertensive pts with non hypertrophic heart and normal ventricular geometry. It is, however, able to decrease LV mass and to improve LV geometry in pts with T.V concentric remodeling

1076-61 Effects of Picotamide, an Antiplatelet Drug, on Urinary Thromboxane/Prostacyclin Metabolites and Blood Pressure in Hypertensive Patients Treated With an ACE-Inhibitor

M. Milani, G. Abbiati [1], L. Arrigoni [1]. *Medical Department, Sandoz PF, Milan, Italy,* [1] *Pharmacology Department, Sandoz PF, Milan, Italy*

Concomitant treatment with aspirin and others cyclooxygenase inhibitors (CO-I) could partially buffer the blood pressure (BP) lowering effects of antihypertensive drugs, particularly ACE-Inhibitors (ACE-I). This interaction could be due to the block of vasodilating prostaglandins production. Picotamide (Pico) is a non-CO-I antiplatelet drug which, in vitro, inhibits thromboxane (Tx) synthase and antagonizes Tx receptors, without affecting prostacyclin (PGI2) production. We assessed the effects of Pico, 600 mg twice daily, on: 1) urinary excretion of 11-dehydro(DH)-TxB2, the main platelet Tx metabolite, and 6-keto-PGF1α, the main metabolite of PGI2, and 2) casual BP values in hypertensive (HT) patients treated with the ACE-I enalapril. Twelve HT patients, under chronic treatment with enalapril 20 mg daily, (8 men; mean age 54 ± 4 years) were enrolled in a double-blind, placebo-controlled, cross-over 8-week trial. Urinary excretion (24-hour urine collection) of 11-DH-TxB2 and 6-keto-PGF1α (pg) were measured at base-line and at the end of each cross-over phase, by means of RIA test (NEN Research Boston MA). Base-line 11-DH-TxB2 and 6-keto-PGF1α were 58 and 45 pg/μmol creatinine (cr) respectively. Pico reduced 11-DH-TxB2 by 40%, (31 pg/μmol cr; $P < 0.05$) as compared to base-line and placebo (53 pg/μmol cr) values. Pico did not affect the excretion of 6-keto-PGF1α (base-line: 45 pg; placebo: 48 pg; Pico: 43 pg). Base-line systolic (SBP) and diastolic (DBP) values were 148/85 mm Hg. After Pico and placebo treatments, SBP/DBP values were 147/84 and 148/83 mmHg, respectively (NS). In HT patients treated with enalapril, Pico exerts an antiplatelet effect, without interfering with the BP lowering action of the ACE-I.

1076-62 Early Left Ventricular Mass Regression Measured by 3D Echocardiography in Hypertensive Subjects is Associated with Improvement of Doppler-Measured Mitral Inflow

A.S. Gopal, Z. Shen, O.O. Akinboboye, A.M. Keller, D.L. King. *Mount Sinai Medical Center and Columbia University, New York, NY, USA*

Background: Measurement of changes in diastolic function indicated by mitral inflow velocity is useful for assessing the efficacy of antihypertensive therapy. We have previously demonstrated by three-dimensional echocardiography (3D ECHO) a significant reduction of left ventricular (LV) mass early (6 weeks) after initiation of antihypertensive therapy. However, there is little data to indicate if Doppler-derived mitral inflow parameters of diastolic function also show significant changes at this early stage of therapy. *Purpose:* To determine if Doppler-derived mitral inflow parameters show improvement after 6 weeks of therapy paralleling reduction of LV mass. *Methods:* 20 patients with uncontrolled hypertension and hypertrophy underwent 3D ECHO and Doppler assessment of mitral inflow at baseline and after 6 weeks of therapy. LV mass was computed by a 3D ECHO surface reconstruction algorithm using 8–10 short-axis images guided by an acoustic spatial locator and line of intersection display. Doppler parameters (E/A velocity ratio and deceleration time DT) were measured at the tips of the valve leaflets. *Statistical Analysis:* The paired T test was used to determine significant change of parameters. *Results:* 12 patients with initial E/A ratio < 1 were found to have significant improvement of E/A ratio from 0.678 to 0.838 after 6 weeks ($p = 0.001$). Deceleration time (DT) did not show a significant change. These 12 patients also showed a decrease of LV mass after 6 weeks ($p = 0.067$) from a mean of 148.4 g to 134.2 g (14.2 g decrease). For the whole group of 20 patients (including initially normal/pseudonormal E/A), the E/A ratio also showed significant improvement after 6 weeks from 0.909 to 1.052 ($p = 0.01$). For the whole group, mean mass decreased 11.5 g ($p = 0.0018$). *Conclusion:* The Doppler-derived E/A ratio of mitral inflow velocity improves significantly after 6 weeks of antihypertensive therapy in parallel with significant reduction of LV mass.

1076-63 Persistence of Left Ventricular Hypertrophy is a Stronger Indicator of Cardiovascular Events Than Baseline LV Mass or Performance. A Ten Years Follow-Up

M.L. Muiesan, M. Salvetti, R. Zulli, M. Castellano, D. Rizzoni, A. Cinelli, E. Porteri, S. Calebich, E. Agabiti-Rosei. *Chair of Semeiotica e Metodologia Medica, University of Brescia, Italy*

Left ventricular hypertrophy (LVH) and reduced LV performance have been shown to be associated to an adverse prognosis in hypertensive patients (Hpts); however, whether the increased cardiovascular (CV) risk is related to persistence of LVH or to low LV performance is unknown.

In 151 uncomplicated Hpts (87 M, 64 F, age range 18–70 yrs) echocardiographic evaluation of LV anatomy and function was performed and repeated on average 10 ± 1 years after the initial study. Hpts were divided according to the presence or absence of LVH (LV mass index, LVMI, > 134 g/m^2 in males and 110 g/m^2 in females) at baseline and at follow-up.

The incidence of non-fatal CV events was significantly greater in patients without reduction of LVMI, after adjusting for traditional risk factors (relative risk = 3.52 vs 1.38, in Hpts with persistence and regression of LVH respectively, $p < 0.01$). Baseline endocardial (e) and midwall (m) fractional shortening (FS) were lower in Hpts with both persistence or regression of LVH (Anova $p < 0.02$ and $p < 0.0001$) than in Hpts with normal LVMI. Logistic analysis showed that LVMI at follow-up and age were independent predictors of non fatal CV events ($p < 0.001$); only when LVMI at follow-up was not considered, logistic analysis showed that age, systolic BP at follow-up, and baseline mFS (% of predicted value) were independent predictors of non-fatal CV events. A tendency toward a worse event-free survival was observed in Hpts with a low mFS (< 14%) (Mantel Cox, $p = 0.06$).

Our results suggest that persistence of LVH is a stronger indicators of CV risk than baseline low LV performance.